

PROCEEDINGS
OF THE
NEW ENGLAND ZOÖLOGICAL CLUB

FOUR NEW AND INTERESTING ANTS FROM THE
MOUNTAINS OF BORNEO AND LUZON.

BY WILLIAM MORTON WHEELER.

FOR some time specimens of ants from Borneo, the Philippines and other East Indian islands have been accumulating in my collection. Among these are four species belonging to rare and archaic genera, and although they are represented by single specimens, it seems advisable to describe and figure them by themselves, as pressure of other work may greatly delay publication of the entire collection. The first species described below, *Metapone bakeri*, belongs to an extraordinary, recently discovered East Indian and Australian genus, which in certain respects is intermediate between two great subfamilies, the Ponerinæ and Myrmiciniæ, although it has now been assigned to a special tribe of the latter. The second species, *Dilobocondyla borneënsis*, belongs to a small and imperfectly known group of rare ants allied to *Atopomyrmex*. The third ant, *Myrmoteras donisthorpei*, is of peculiar interest because it is the unknown female of a singular genus founded many years ago by Forel on worker specimens of another species, taken in Burma by the late Col. C. F. Bingham. These ants, though very highly specialized, are evidently very rare survivors of an ancient, probably Mesozoic, fauna. The fourth

species, *Dimorphomyrmex luzonensis*, is also a very ancient form. The genus is known from two species in the Baltic Amber (Lower Oligocene) and a single extant species from Borneo. The female of the genus, however, was previously unknown.

***Metapone bakeri* sp. nov.**

Figure 1.

Female. Length 6.4 mm.

Head subrectangular, longer than broad, distinctly broader behind than in front, with scarcely concave posterior border, rounded posterior corners and rather convex cheeks. Eyes large, feebly convex, their anterior

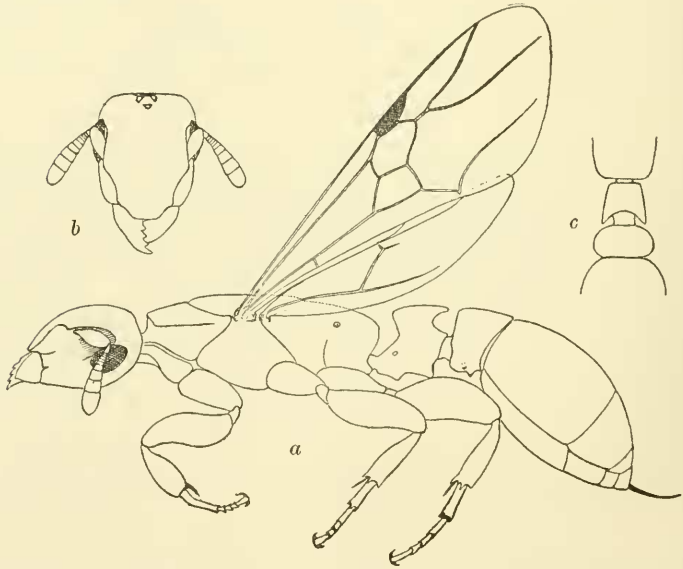


Figure 1.—*Metapone bakeri* sp. nov. a. Female in profile; b, head of same, dorsal view; c, petiole and postpetiole, dorsal view.

orbits at the median transverse diameter of the head; ocelli rather small. Mandibles moderately convex, with abruptly bent tips, the apical border with four subequal, acute teeth and a rounded basal lobe. Clypeus convex,

its median lobe projecting, straight in the middle, with a blunt tooth-like projection on each side, not separated behind by a suture from the head. Frontal carinae overarching well-developed scrobes for the accommodation of the antennae as in the other species of the genus, continued anteriorly into sharp lateral expansions of the clypeus. Though deep above, the scrobes become broad and much shallower ventrally, where they pass over into the cheeks without ventral bounding ridges. Antennae inserted under the dorsal borders of the scrobes at about their middle, much flattened, 11-jointed; the scape very short, elliptical, a little more than twice as long as broad and extending only to about the middle of the dorsal orbit. First funicular joint a little more than one and one-half times as long as broad; joints 2-6 much broader than long, seventh joint relatively longer, joints 8-10 forming a very distinct club, the eighth and ninth subequal and each nearly as long as broad, together as long as the broadly elliptical terminal joint. Thorax narrower than the head, very long, nearly three times as long as high, broadest in the region of the insertion of the fore wings, its sides submarginate above; pronotum with subangular humeri, broader than long, separated by a pronounced suture from the mesonotum, which together with the scutellum is broadly elliptical and longer than broad; epinotum subeuboidal, with parallel sides, longer than broad, its base in profile feebly and evenly convex, longer than the perpendicular and inferiorly concave declivity into which it passes through a rounded but abrupt angle. Petiole seen from above narrower than the epinotum, a little longer than broad, broader behind than in front, with marginate anterior, lateral and posterior borders, the anterior and lateral borders straight, the posterior deeply and somewhat angularly excised in the middle, so that the segment has two large, flat, posteriorly directed tooth-like projections; in profile the petiole is anvil-shaped, fully one and one half times as high as long, with the sides decidedly concave as are also the anterior and posterior surfaces. Its upper surface is horizontal, its ventral surface with two large, blunt, angular projections. Postpetiole from above transversely elliptical, broader than the petiole and nearly twice as broad as long, its anterior and lateral borders convex and evenly rounded, its anterior and lateral surfaces abrupt, its posterior border straight; in profile it is subtriangular, with straight dorsal and short ventral surface, provided with a blunt projection in front and a small tooth behind. Gaster rather small, suboblong, with rounded anterior border and feebly convex, subparallel sides. Sting well developed but slender. Legs short, the femora broad and elliptical, distinctly compressed. Tips of tibiae and metatarsi of the middle and hind legs with spurs and a cirelet of teeth, much as in the other species of the genus. Wings rather short, with closed marginal cell, a single cubital and a well-developed discal cell. Apterostigma rather large.

Extremely smooth and shining throughout, with sparse, very inconspicuous, piligerous punctures on the upper surface; posterior portion of antennal scrobes densely, longitudinally striated.

Hairs whitish, short, sparse, erect, nearly lacking on the pleuræ, most conspicuous on the gaster and legs.

Black; mandibles tinged with red; antennæ, fore legs, tibiæ, tarsi and tips and bases of femora of the middle and hind pairs, reddish castaneous; wings feebly infuscated, especially along the anteroapical margin; veins resin-colored; apterostigma dark brown.

Described from a single specimen taken by Prof. C. F. Baker on Mt. Banahao, Luzon Island, Philippines.

The genus *Metapone* was founded in 1911 by Forel on a species (*M. greeni*) from Peradenya, Ceylon. As the types were taken by Mr. E. E. Green "from galleries in a decayed branch, which was also infested by two species of termites," Forel concluded that *Metapone* must be termitophagous. In 1913 he described a second species (*M. sauteri*) from a female taken by H. Sauter at Yokutsu, Formosa, and in 1915 a third species (*M. mjobergi*) taken by Dr. E. Mjöberg at Malanda, Queensland. The Museum of South Australia has recently sent me several worker and female specimens of this last species taken by Mr. A. M. Lea on Mt. Tambourine, Queensland, and at Dorrigo, New South Wales. All of these species differ from *M. bakeri* in several characters, such as the shape of the head, petiole and postpetiole, and in color and sculpture. They are all dark brown, much less shining, and have the head and thorax longitudinally striated. It thus appears that the genus *Metapone*, though only recently brought to light, has a wide distribution in the Indomalayan and Australian regions and comprises at least four species.

***Dilobocondyla borneënsis* sp. nov.**

Figure 2.

Worker. Length 4.5 mm.

Head, excluding the mandibles, a little longer than broad, subrectangular, slightly broader behind than in front, with acutely pointed posterior corners, broadly excavated posterior borders and nearly straight sides. Eyes moderately large and convex, at the middle of the sides of the head. Mandibles convex, 6-toothed. Clypeus rather flat, abruptly descending, with a median and on each side three lateral ridges, which are scarcely more than longitudinal rugæ; the anterior border distinctly notched in the

middle and on each side. Frontal area indistinct; frontal carinæ long, diverging behind and bordering distinct antennal scrobes. These and the carinæ, though as long as the antennal scapes, do not reach the posterior corners of the head. Antennæ 12-jointed; scapes reaching a little behind the eyes; funiculi with a very distinct 3-jointed club, the first joint of which is longer than the second, the first and second together equal to the terminal joint; the first and eighth joints of the remainder of the funiculus as long as broad, the intermediate joints distinctly transverse. Thorax narrower than the head, broadest through the pronotum, which has acute humeral angles and is feebly and evenly convex above. In front it rises abruptly from the neck, and is sharply marginate anteriorly and down each side to the insertions of the fore coxæ. There is a very distinct mesoepinotal constriction, and the epinotum is small and unarmed, rounded in profile, without distinct base and declivity and without lamellate metasternal angles. Petiole cylindrical, seen from above nearly twice as long as broad, with straight parallel sides, in profile without a node, slightly convex above, its ventral surface in front with a stout tooth. Postpetiole about one and one third times as long as broad, slightly broader than the petiole, broader behind than in front, with a distinct node above, highest posteriorly. Gaster nearly circular, flattened dorso-ventrally, formed almost entirely of the first segment. Femora and tibiæ strongly incrassated.

Somewhat shining; mandibles very coarsely and densely rugose; head between the frontal carinæ with ten coarse, equidistant, longitudinal rugæ, the spaces between which on the front are opaque and densely punctate, behind traversed by cross-rugæ. Posterior corners, sides and ventral surface of head very coarsely reticulate-rugose, with shining spaces between the rugæ. Antennal scrobes in front with three transverse rugæ, behind densely punctate. Thorax, petiole and postpetiole very coarsely reticulate-rugose, like the back of the head; mesopleuræ and sides of the epinotum coarsely longitudinally rugose. Gaster and fore coxæ subopaque, densely punctate, the former also with short radiating rugæ at the extreme base. Legs shining, the femora with small, scattered, piligerous punctures, the tibiæ very finely longitudinally striated.

Whole body covered with erect, delicate but blunt, whitish hairs; pubescence absent.

Brownish black; mandibles, except their teeth, antennal scapes, base of funiculi, trochanters and terminal tarsal joints, reddish brown.

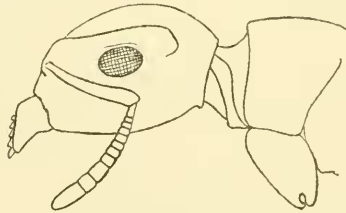


Figure 2.—*Dilobocondyla borneensis* sp. nov. Head and pronotum of worker in profile.

Described from a single specimen taken by Mr. John Hewitt on Bongo Mountain, Sarawak, Borneo.

This species seems to be very close to the type of the genus, *D. selebensis* Emery of Celebes, which, however, is based on a female specimen. It differs from the worker of *borneënsis* in having the antennal scrobes extending to the posterior corners of the head, the antennal clava very indistinct and with the penultimate longer than the antepenultimate joint, and in lacking the ventral tooth of the petiole. From the other known species, *D. fouqueti* Santschi of Tonkin, the Bornean species differs in color and sculpture, in the shorter antennal scrobe, convex epinotal declivity, etc.

***Myrmoteras donisthorpei* sp. nov.**

Figure 3.

Female. Length 4.2 mm.

Head large, including the eyes and excluding the mandibles, as long as broad, rather convex above, its short occipital portion about half as broad as the diameter through the eyes, separated from the higher anterior portion by a deep transverse groove; posterior corners of anterior portion prominent and angular. Eyes very large and convex, reniform; cheeks very short; ocelli very small. Mandibles much longer than the head, linear, parallel, flattened, their outer margins very feebly convex, their inner margins straight, dentate throughout, each mandible bearing fourteen teeth. The teeth on the basal two thirds of the margin are small, equidistant, gradually increasing in length distally towards the apical third which bears four long, equidistant teeth, alternating with small teeth, the penultimate tooth being acute and very small. Clypeus as long as broad, flattened and bilobed in front, convex and subcarinate behind in the middle. Frontal area distinct, triangular; frontal groove pronounced as far back as the anterior ocellus; frontal carinæ small, vestigial, far apart. Antennæ very slender, 12-jointed; scapes extending fully one fourth their length beyond the posterior border of the head; funiculi filiform, not enlarged at the tip, all the joints more than twice as long as broad; terminal joint slightly longer than the two preceding joints together. Thorax small, much narrower than the head; mesonotum convex in front, rising well above the pronotum, flattened behind, about as long as broad; epinotum as long as broad, in profile higher than long, its base and declivity subequal, meeting at a rounded obtuse angle. Petiole

from above longer than broad, with the node situated at its middle, transverse, bluntly rounded above, somewhat compressed anteroposteriorly, its anterior surface in profile perpendicular, its posterior surface more sloping. Gaster small, broadly and regularly elliptical, formed very largely of the first segment (but not quite so large as in the figure). Legs long and slender, middle and hind tibiae peculiarly incrassated and fusiform, attenuated basally. Wings short and rather narrow; anterior pair

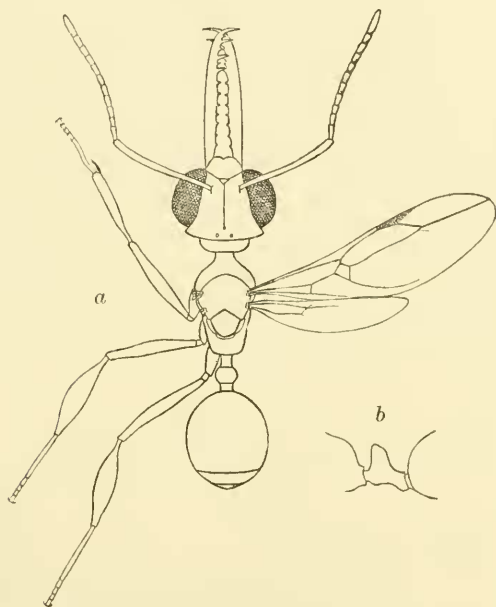


Figure 3.—*Myrmolepus donisthorpei* sp. nov. a, Female, dorsal view; b, petiole of same in profile.

with the radial cell closed, one cubital and a small discal cell, and the distal segment of the cubital vein absent except at its origin. Hind wings with much reduced venation.

Surface of body shining; mandibles smooth and impunctate; head, except the occiput, finely and densely rugulose, the rugae on the front longitudinal. Thorax more or less rugulose, the pronotum finely and transversely, the base of the epinotum coarsely and transversely, the mesopleurae finely and longitudinally, the mesonotum finely and obscurely longitudinally, punctate-rugulose. Petiole, gaster and legs smooth and shining.

Hairs white, delicate, rather long, sparse, erect, evenly distributed on the body, legs and scapes.

Castaneous; head somewhat paler and more reddish; mandibles and femora honey-yellow; antennæ, fore tibiæ, tarsi and tips of femora yellowish brown, the dilated middle and hind tibiæ darker brown. Wings brownish hyaline, with brown veins and apterostigma.

Described from a single specimen taken by Mr. G. E. Bryant on Mt. Matang, West Sarawak, Borneo, and sent me by my friend Mr. Horace Donisthorpe.

This species is very distinct from the only other known member of the genus, *M. binghami*. Forel from the Thaungyin Valley, Tenasserim, as I find by comparison with a cotype kindly given me by Prof. Forel several years ago. The Bornean specimen can hardly be the hitherto unknown female of *binghami*, as the worker of the latter is larger (5 mm.), has only eleven mandibular teeth, with two minute denticles between the penultimate and terminal long teeth, the legs are decidedly longer, the middle and hind tibiæ are much less incrassated, the clypeus is of a very different shape, the surface of the body is much smoother and the color much paler.

***Dimorphomyrmex luzonensis* sp. nov.**

Figure 4.

Female. Length about 8.5 mm.

Body slender; head oblong, excluding the mandibles, a little more than one and one half times as long as broad, as broad in front as behind, but distinctly narrowed in the middle, with nearly straight posterior border and convex cheeks; in profile nearly two and one half times as long as high, flattened above and below. Mandibles convex above and on the sides, with six coarse teeth. Clypeus broad, extending to the lateral borders of the head, with a flat median and two convex lateral portions; the former not projecting as far forward as the latter. Frontal area and groove distinct, the former large and triangular, the latter extending to the anterior ocellus. Frontal carinæ straight, diverging behind, more than twice as far apart as the distance of each from the lateral border of the head, and extending to the middle of the anterior orbits. Eyes large, nearly one third as long as the head, a little further from the anterior border of the clypeus than from the occipital border of the head, subelliptical, with slightly concave medial and convex lateral orbits. Ocelli well developed, situated very far forward so that the posterior pair are nearly on a line connecting

the posterior ends of the compound eyes. Antennæ small, 10-jointed; scapes distinctly dilated and flattened at their tips, which reach to about the posterior third of the eyes; first funicular joint about twice as long as broad, joints 2-8 slightly longer than broad, terminal joint twice as long as broad (slightly longer and more pointed than in the figure). Thorax elongate elliptical, nearly two and one half times as long as broad, flattened above; pronotum broader than long, mesonotum as long as broad, the promesonotal suture semicircular. Epinotum long and low, with indistinct

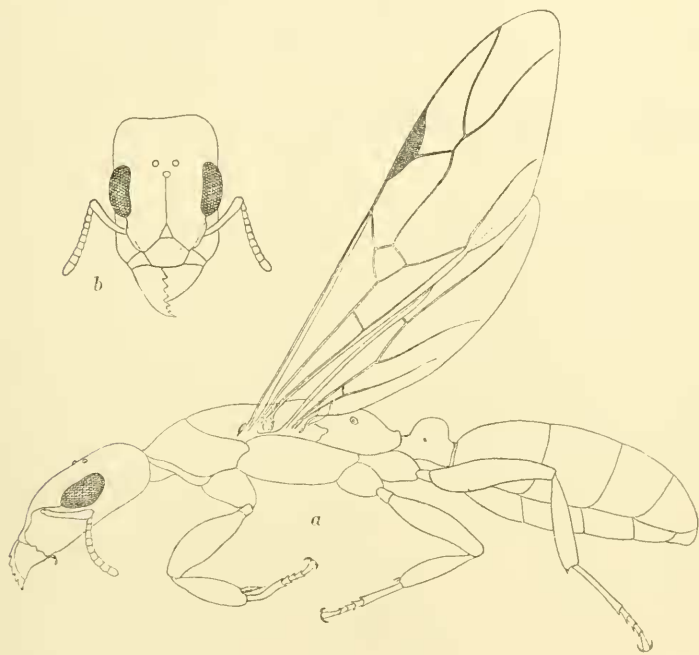


Figure 4.—*Dimorphyrmex luzonensis* sp. nov. a, Female, in profile; b, head of same, dorsal view.

base and declivity, the former longer and passing over into the latter very gradually. Petiole scarcely broader than long, much narrower than the epinotum, the node very thick, low and evenly convex and rounded above. Gaster more than twice as long as broad, somewhat compressed dorso-ventrally. Legs short and stout; femora broad, slightly compressed; middle and hind tibiæ with very short spurs. Claws of tarsi well developed. Fore wings with a closed radial cell, a single cubital and small but well developed discal cell and a large apterostigma.

Surface smooth and shining; mandibles covered with coarse, elongate punctures; median portion of clypeus, checks and front longitudinally striated. Thorax very delicately, gaster a little more coarsely, shagreened and covered with minute, scattered punctures.

Hairs yellowish, very short, almost lacking on the body, except on the venter; abundant, stiff and blunt on the mandibles, clypeus and checks; tibiae with minute, dilute appressed hairs or pubescence.

Yellow; mandibles, a round spot on the ocellar region, a transverse, crescentic blotch occupying the disc of the pronotum, and each of the gastric segments, except its basal and apical border, castaneous. Wings uniformly tinged with brownish yellow, with clear, brown veins and apterostigma.

Described from a single specimen taken by Prof. C. F. Baker on Mt. Makiling, Luzon Island, Philippines.

The three previously known species of *Dimorphomyrmex*, viz. *D. theryi* Emery and *mayri* Wheeler of the Baltic Amber and *D. janeti* Ern. André of Borneo, are known only from worker specimens. These have 8-jointed antennæ. Although the female above described has 10-jointed antennæ, I believe that it must belong to the same genus. We should, in fact, expect the worker and female of *Dimorphomyrmex* to differ in the number of antennal joints, especially as André found nine joints in one of his specimens of *D. janeti*. It is even possible that *D. luzonensis* may be the female of André's species. The shape of the body and the peculiar sculpture and pilosity of the anterior portion of the head in this phase, so like the conditions in certain species of *Colobopsis* and *Aphomyrmex*, indicate very clearly that the colonies of *Dimorphomyrmex* are small and inhabit hollow twigs. Collectors in Borneo and the Philippines should make diligent search in these objects for the missing phases of the two surviving species of this singular archaic genus.